

a rectangle or other boundary that governs whether or not a selected map item can be adequately displayed to the end user. For example, if a map item is only partly shown on the edge of the navigation map, then it may not be within the “show selection” window. In contrast, a map item that is centered in the navigation map will most likely be contained within the “show selection” area. If the new selection is within the “show selection” area (query task **2314**), then process **2300** may proceed to a task **2318**. If the new selection is outside of the “show selection” area, then the navigation system may shift, pan, or adjust the map to ensure that the new selection is contained within the “show selection” area (task **2316**).

[0239] Task **2318** may be performed to add a selection graphic to the newly selected map item or to otherwise change the appearance of the newly selected map item. As described above, a selected map item may be highlighted with shading, coloring, text, additional graphic elements, or the like. In the preferred embodiment, task **2318** causes the navigation system to distinguish the newly selected map items from the remaining map items in a visible manner.

[0240] If the navigation system is in the “show guidance indicators” mode (query task **2320**), then new guidance indicators may be displayed in connection with neighboring map items (task **2322**). In a practical embodiment, task **2322** determines a logical mapping for each of the new guidance indicators corresponding to the directional keys utilized by the respective presentation device. For example, up to four new guidance arrows may be displayed; one for each cardinal direction.

[0241] In response to the new map item selection, the navigation system may also update a preview area (e.g., preview area **412** in FIG. 4) to display, show, or play content related to the newly selected channel, station, or file (task **2324**). In addition, change selection process **2300** may update the content description area **410** (task **2326**) and/or the map item information area **408** (task **2328**) as necessary. Task **2326** may update the description area **410** with information related to the current program or file corresponding to the new map item, and task **2328** may update the information area **408** with programming or control information associated with the newly selected station or channel.

[0242] FIG. 24 is a flow diagram of a navigation map presentation process **2400** that may be performed by a practical embodiment of the present invention. Process **2400** assumes that the navigation interface display system is configured in accordance with the layered architecture techniques described above. Although not a requirement of the display system, process **2400** is described herein in the context of a deployment to support one system administrator, e.g., one broadcast service provider such as a cable television company. In other words, although one display system may be deployed in a manner that supports a plurality of service providers, a realistic practical implementation will enable one service provider to support its subscribers in a centralized manner.

[0243] Map presentation process **2400** preferably begins with a task **2402**, during which map databases **508** (see FIG. 5) receive and store generic map data associated with one or more deployed navigation maps. In the context of a deployment by a single service provider, map databases **508** may include generic map data related to any number of different

users (indeed, each user may have a unique set of map preferences maintained by display system **500**). Map databases **508** may also contain generic map data related to any number of different map preferences, configurations, designs, or the like, where such different maps need not be associated with specific end users.

[0244] Due to the preferred server-based architecture of the display system **500**, a map servers **504** receive a map request from an end user (task **2404**) who wishes to view a particular navigation map. In the practical embodiment, such map requests are generated by the respective presentation layer. The map request includes a suitable map identifier, such as a URL, that enables map servers **504** to extract the appropriate data from map databases **508**. A task **2406** is performed to retrieve the generic map data (from map databases **508**) associated with the requested navigation map. As described above, map servers **504** may utilize any number of known database management techniques to communicate with and extract data from map databases **508**.

[0245] If necessary, map presentation process **2400** performs a task **2408** to obtain content information from application databases **506**. Task **2408** obtains the content data associated with the current map request. As described above, application databases **506** are typically externally-maintained databases associated with a specific presentation device, a particular content provider, or the like. For example, in a cable or satellite television deployment, an application database **506** may contain current programming data that is updated on a daily basis. In one practical embodiment, map servers **504** are suitably configured to interrogate application databases **506** and to extract the relevant data therefrom. Map servers **504** may process the relevant content data with the relevant generic map data during process **2400**.

[0246] After map servers **504** obtain the content data and the generic map data, a task **2410** may be performed to suitably provide such data to the applicable presentation layer. As described above, any number of conventional data communication protocols can be employed to carry out task **2410**. In particular, task **2410** preferably provides the generic map data and the content data to the application server associated with the respective presentation layer. In view of the generic nature of the map data, map servers **504** need not know the characteristics of the end user's presentation device or the ultimate format in which the map data will be provided to the presentation device. In the preferred embodiment, each application server is configured to recognize the generic map data format used by map servers **504**. In addition, each application server is compatible with the corresponding presentation device. Accordingly, a task **2412** is preferably performed by an appropriate application server to convert the generic map data and the application or content data into a format suitable for use by the specific presentation device.

[0247] Eventually, a task **2414** is performed by the respective presentation device to suitably render the navigation map on the corresponding display element. In connection with task **2414**, the respective application server has generated reformatted map data in a manner that is recognizable by the presentation device. Thus, the presentation device need not be specially configured to receive or process the map data. Rather, the presentation device merely renders the